DOCUMENT RESUME

ED 160 019 HE 010 485

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TITLE Salary Increases and Teaching Effectiveness: A Replication and Expansion. Research Report No. 38.
INSTITUTION Kansas State Univ., Manhattan. Office of Educational Research.
PUB DATE Mar 77
NOTE 20p.
AVAILABLE FROM Office of Educational Research, Kansas State University, Manhattan, Kansas 66506

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *College Faculty; College Students; Correlation; Departments; *Effective Teaching; Higher Education; Institutional Research; Intellectual Disciplines; Research Projects; School Surveys; State Universities; Statistical Analysis; Student Attitudes; *Student Evaluation of Teacher Performance; Student Motivation; Student Teacher Relationship; *Teacher Evaluation; *Teacher Salaries
IDENTIFIERS *Kansas State University

ABSTRACT

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KANSAS STATE UNIVERSITY
MANHATTAN, KANSAS

Office of Educational Research

Kansas State University

Research Report #38

SALARY INCREASES AND TEACHING EFFECTIVENESS: A REPLICATION AND EXPANSION

Donald P. Hoyt and Jeffrey G. Reed

March 1977

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The relationship between salary increases and student ratings of teaching effectiveness was studied for a sample of 266 faculty members at Kansas State University. Three measures of teaching effectiveness (student progress in meeting relevant course objectives, liking the instructor, and appreciation of the field of study) and two salary criteria (percent and dollar increase) were used. Several measures of the emphasis on the teaching function were used to determine if this variable moderated the relationship between salaries and student ratings. The effect of discipline was also examined.

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SALARY INCREASES AND TEACHING EFFECTIVENESS: A REPLICATION AND EXPANSION

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Shrinking enrollments at many institutions, increasing demands for accountability and relevance, gradual constriction of funding sources for higher education, and other factors have generated considerable interest in the evaluation of the performance of faculty members. (Hoyt,1974a) Teaching evaluation by students has increasingly become a feature of college campuses, and is frequently mentioned as one basis for making decisions about salary, tenure, and promotion. Despite this, a common student perception is that their ratings are not taken seriously and that good teaching is simply not rewarded.

Relatively little empirical data are available to either confirm or dispute the allegation that teaching effectiveness is not reflected in salary recommendations. At Kansas State University, Hoyt (1974a) found that faculty members whose students reacted favorably to their instruction received, over time, higher salary increments than those rated as less effective; but the correlation between average salary increment and teaching effectiveness was only +.20. In a subsequent study, Hoyt (1974b) showed that, after the faculty evaluation process became formalized, the relationship between salary increments and teaching effectiveness (as rated by students) increased. The relationship was stronger in the social-behavioral sciences than in the natural-mathematical sciences. Katz (1973) found no relationship between student ratings of instructional effectiveness and salary adjustments at the University of Illinois; and similar results were reported for economists at the University of Wisconsin (Siegfried and White, 1973). Koch and Chizmar (1973), however, found a summary rating of teaching effectiveness positively related to recommended salary increments, and more predictive of such increments than measures of "scholarly productivity" or "service" at Illinois State University.

Thorne et al (1976) surveyed representative samples of faculty members employed in the Oregon System of Higher Education. Regardless of discipline, faculty members in the "university" sample preferred to be evaluated by student ratings and by their publication record; for particular disciplines a few additional formal measures were sometimes mentioned. Without exception, these faculty groups objected to such indices as chairman's judgment or evaluation by committee if these were not based on systematically collected data. Respondents also resisted informal colleague ratings, time in rank, and public presentations as a basis for evaluation. Keene's (1975) report of a correlation of .40 between recommended salary increment and teaching effectiveness as judged by the chairman may reflect the type of "halo" error which the Oregon faculty apparently suspected.

McKeachie and Lin (1975) conducted the only experiment which has been reported in the literature. They used 20 senior University of Michigan faculty members, all of whom had served on promotion and tenure committees, to judge the promotability of "hypothetical" faculty members. Faculty and student estimates of teaching ability, research productivity, sex, and academic department of the cases were varied systematically. Judges were asked to make decisions on promotion and salary increase recommendations. Much more emphasis was placed on research productivity than on teaching ability, and there was "little evidence that information from student ratings of teaching is utilized when decisions regarding promotions and salaries are made" (McKeachie and Lin, 1975, p.21).

Although the data are not conclusive, two general hypotheses emerge from the literature. (1) The degree to which objective measures of teaching effectiveness relate to salary adjustments is a direct function of the degree to which the teaching function is emphasized. (2) The relationship between these two variables differs among various academic disciplines.

The present investigation was designed to explore these hypotheses for a sample of Kansas State University faculty members.

PROCEDURES

Sample

Faculty members were included in the study if they had:

(a) voluntarily participated in the KSU "student evaluation of instruction" program during 1974-1975 (Hoyt, 1973; CFE & DHE, 1975); and
(b) completed the "Faculty Survey for State Colleges and Universities of Kansas, Fall 1974" (herein called: Activity Survey) (Kansas, State Board of Regents, 1975).

Graduate teaching assistants and faculty members who were not reappointed for the 1975-76 year were excluded from the study. A total of 266 faculty members met these requirements.

Subsamples

To explore the hypotheses, it was necessary to divide the sample into subgroups according to discipline and according to emphasis on teaching as a professional activity. In the earlier study, Hoyt (1974b) used only two broad groupings (natural-mathematical scientists and social-behavioral scientists). This study retained those broad groupings and created a third, Humanities and Arts. In addition, more homogenous groups were constructed as follows:

1. Social Sciences, including history (N=20).
2. Humanities and Fine Arts (N=24).
3. Applied Sciences (Agriculture, Engineering, Foods & Nutrition, Veterinary Medicine) (N=55).
4. Applied Social Sciences (Education, Business, Speech Pathology and Audiology, Family and Child Development, Institutional Management, Regional and Community Planning, Family Economics) (N=79).
5. Applied Arts (Architecture and Design, Mass Communications and Journalism, Clothing, Textiles & Interior Design) (N=25).
6. Natural Sciences (Biological Sciences, Physical Sciences, Psychology, Plant Pathology, Entomology, Grain Science) (N=44).
7. Mathematical Sciences (Mathematics, Statistics, Computer Science, Applied Mechanics) (N=19).

To distinguish among faculty members who differed in the emphasis given to the teaching function, several special subgroups were formed. These are described below:

1. Academic Rank. Many non-teaching responsibilities are traditionally fulfilled by experienced and "proven" faculty members (service on important committees or on Faculty Senate, leadership in professional associations, writing/executing grants and contracts, etc.). Consequently, faculty members with low ranks give relatively more emphasis to teaching than do those with senior ranks. Therefore, the expectation was that the correlation between salary increments and student ratings of teaching effectiveness would be higher for the former than for the latter.

2. Departmental Program. Presumably, departments offering the Ph.D. will need to give a special emphasis to research; therefore, relatively speaking, their emphasis on teaching was expected to be less than for departments which did not award the Ph.D.

3. Teaching Emphasis in Workload. The Activity Survey asked faculty members to estimate the average number of hours they spent each week in a variety of teaching and non-teaching activities. From these reports, two ratios were derived, as follows:

a. (Direct Teaching) $$\text{Ratio-A} = \frac{\text{DTA}}{\text{DTA} + \text{OTA} + \text{RSC} + \text{ISA} + \text{EGPS}}$$

b. (All Teaching) $$\text{Ratio-B} = \frac{\text{DTA} + \text{OTA}}{\text{DTA} + \text{OTA} + \text{RSC} + \text{ISA} + \text{EGPS}}$$

The component parts of the above equations are:

DTA (Direct Teaching Activities): number of hours meeting with classes, reading student papers, supervising laboratories, evaluating students, preparing lectures; etc.
OTA (Other Teaching Activities): number of hours of unscheduled teaching, academic advising, course and curriculum development,etc.

RSC (Research, Scholarship, & Creative Activities): number of hours devoted to funded and non-funded research, giving recitals, editing a journal, reviewing work of colleagues, writing articles, etc.

ISA (Internal Service Activities): number of hours in student-oriented activities such as recruiting students, writing recommendations, sponsoring student organizations; attending recitals; administrative duties such as writing reports, preparing budgets, recruiting faculty, administering research grants; academic and professional support services for library or computer center; committee participation.

EGPS (External and General Professional Service): number of hours in Agriculture and Home Economics Extension, Continuing Education overload teaching, consulting, public lectures, other professional services.

It was expected that salary increments for faculty members with high ratios (high emphasis on teaching) would be more closely related to student ratings of instruction than would be the case for those with low ratios.

Measures

Data collected for each subject were the same as those in the earlier KSU study (Hoyt, 1974b). In addition, an estimate of student motivation was included. These measures are identified below.

1. Student Ratings. Of the several specific ratings made by students, three were selected as overall measures of teaching effectiveness.
   a. Progress on relevant objectives. From a list of 10 objectives, instructors identified those which were "essential", "important", or "of no more than minor importance" for the course in question. Students rated their progress on these same objectives, using a five-point rating scale. Average student progress ratings were weighted by the instructor's ratings of importance ("essential" = 2; "important" = 1; "of no more than minor importance" = 0), and the weighted average (Progress on relevant objectives) was used as the first measure of overall teaching effectiveness.
   b. Liking the Instructor. The average response to the item, "I would like to take another course from this instructor", was used as a measure of overall instructor desirability. A five-point rating scale was employed.
   c. Appreciating the Field of Study. The average response to, "As a result of taking this course, I have more positive feelings toward this field of study", was used as a third estimate of teaching effectiveness. Again, a five-point scale was employed.

d. Student Motivation. The average response to the item, "I had a strong desire to take this course", was used to obtain an estimate of student motivation on a five-point scale. This measure has been shown to be related to the three overall criterion measures. Unless its influence was removed (statistically), correlations with salary recommendations may reflect the particular courses assigned rather than teaching effectiveness per se.

In most instances, student ratings were available for more than one course during the semester in question (Fall, 1974-75). An average of all such ratings was used.

2. Salary Recommendations. Two salary measures were used: dollar increase, and percent increase. This information was obtained from the official University budget for 1975-1976.

Analyses

Product moment correlations were computed between each of the three measures of teaching effectiveness and the two measures of salary recommendations. Partial correlations, controlling for the effect of the motivation measure, were also computed.

Comparisons were made among the seven types of disciplines as well as among groups defined by academic rank, highest degree granted, teaching emphasis (Ratio-A, Ratio-B), and a collapsed grouping of academic disciplines.

RESULTS

Descriptive statistics for the sample and subgroups are shown in Table 1.

Overall Correlations

The correlation matrix for the total sample (N = 266) is presented in Table 2, along with partial correlations (student motivation controlled). The two criteria (dollar increase and percent increase) were significantly correlated (.65) as were the three measures of teaching effectiveness (.74 - .86). As expected, motivation was correlated highly with effectiveness ratings (.56 - .72).

INSERT TABLES 1 AND 2 HERE

All three measures of effectiveness (and the student motivation measure) were significantly related to "percent increase", but the magnitude of these relationships was low (.16 - .22). Only one correlated significantly with "dollar increase". This is not surprising since official University policy has been to reflect judgments of merit in "percent" rather than dollar increases.

TABLE 1

OVERALL DESCRIPTIVE STATISTICS FOR THE FACULTY SAMPLE
(N = 266)

I. Academic Rank

	Instructor	Assistant Prof.	Associate Prof.	Professor
Frequency	16	105	90	55
Percent	6	40	34	21

II. Academic Area

	Social Sciences	Humanities Fine Arts	Agriculture Engineering Vet.Medicine	Education Business Spch.Path.	Architecture Design Mass.Commun.	Science	Mathematics Statistics Comput.Sci.
Frequency	20	24	55	79	25	44	19
Percent	8	9	21	30	9	16	7

III. Highest Degree Granted by the Department of which a Member

	Ph.D.	Other
Frequency	162	104
Percent	61	39

IV. Overall Statistics on Criterion and Predictor Variables

	Mean	Standard Deviation
A. Percent Salary Increase	10.70	2.39
B. Dollar Salary Increase	1642.20	454.51
C. Student Ratings of Progress in Meeting Course Objectives	3.71	.44
D. Student Rating of Liking Instructor	3.86	.70
E. Student Rating of Liking Field	3.91	.55
F. Student Rating of Self Motivation	3.65	.60

V. Relative Emphasis on Teaching Activities

	Time Groupings Low	Moderate	High
A. Direct Teaching Activities			
Frequency	54	161	47
Percent	20	60	18
B. All Teaching Activities			
Frequency	45	146	71
Percent	17	55	27

TABLE 2

OVERALL CORRELATIONS BETWEEN PREDICTOR AND CRITERION VARIABLES

I. Zero Order Correlations

	$ Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
% Salary Increase	.65***	.16**	.19***	.22***	.16**
$ Salary Increase		.02	.08	.13*	.07
Progress Rating			.74***	.81***	.66***
Liked Instructor				.86***	.56***
Liked Field					.72***

II. Partial Correlations (Controlling for Motivation)

	Progress Rating	Liked Instructor	Liked Field
% Salary Increase	.07	.13*	.15*
$ Salary Increase	-.03	.05	.12

Significance Levels for Correlations (one-tailed tests)

* $p < .025$
** $p < .005$
*** $p < .001$

To determine if the relationship between salary and effectiveness measures would be affected by controlling for student motivation, partial correlations were computed. Table 2 shows that, when this was done, the correlations were significantly reduced. Only two of the six were statistically significant, and they were too low to be practically meaningful (.13 and .15).

Academic Area

Mean values and correlations between salary increase and teaching effectiveness variables for each of seven academic area subgroups are shown in Table 3. Correlational data followed several basic patterns. Moderately strong zero order correlations were found for Social Sciences, Humanities and Fine Arts, Applied Social Sciences, and Applied Arts (groups A, B, D, and E); but zero order correlations were non-significant for Applied Sciences, Natural Sciences, and Mathematical Sciences (groups C, F, and G). The effect of controlling for motivation through partial correlations produced different results for different groups. For Applied Social Sciences and Applied Arts, partial correlations were very similar to zero order correlations (groups D and E). For the Humanities and Fine Arts group, however, partialling out the effect of student motivation reduced significant correlations (ranging from +.38 to +.54), to zero. Surprisingly, in the Social Sciences, moderate zero order correlations (ranging from +.24 to +.35), were increased (+.31 to +.59) when motivation was partialled out. In the Applied Sciences, Natural Sciences, and Mathematical Sciences subsamples (groups C, F, and G), neither the zero order nor the partial correlations differed significantly from zero.

INSERT TABLES 3 AND 4 HERE

To increase comparability with an earlier study (Hoyt, 1974b), disciplines were grouped into three broad areas -- Natural and Mathematical Sciences (Applied Sciences, Natural Sciences, and Mathematics), Social-Behavioral Sciences (Social Sciences and Applied Social Sciences), and Humanities-Fine Arts (Humanities, Fine Arts, and Applied Arts). Mean values and correlations are reported in Table 4. Significant zero order correlations were obtained for only the last two groups; there was no relationship between salary increases and teaching effectiveness variables for the Natural-Mathematical Sciences group. When motivation was controlled, the magnitude of the relationships was significantly reduced for the Humanities-Fine Arts; for the Social-Behavioral Sciences, the partial correlations were not much lower than the zero order correlations.

The remaining analyses examined predictor/criterion relationships for groups believed to differ in terms of the emphasis given to teaching.

Academic Rank

Mean values and correlations for each of the four academic ranks are shown in Table 5. Consistent with expectations, zero order correlations between salary increases and teaching effectiveness were

TABLE 3

TEACHING EFFECTIVENESS AND SALARY INCREASES:
COMPARISON OF FACULTY MEMBERS IN DIFFERENT ACAEMIC AREAS

I. Mean Values for 7 Academic Areas

	Number	$ Salary Increase	% Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
Social Sci.	20	1533.65	10.73	3.44	3.57	3.72	3.47
Humanities	24	1318.12	10.37	3.78	4.09	3.99	3.71
Applied Sci.	55	1840.53	10.86	3.73	3.90	4.03	3.81
Appl. Soc. Sci.	79	1551.76	10.64	3.88	4.05	4.10	3.73
Applied Arts	25	1621.24	11.10	3.68	3.68	3.79	3.74
Nat. Sciences	44	1754.48	10.46	3.55	3.68	3.68	3.38
Math. Sciences	19	1735.26	10.84	3.58	3.68	3.57	3.46

II. Correlations (Zero Order and Partial) by Academic Area

	Zero Order Correlations		Partial Correlations (Controlling for Motivation)	
	Percent Increase	Dollar Increase	Percent Increase	Dollar Increase
A. Social Sciences				
Progress Rating	.27	.24	.31	.36
Liked Instructor	.35	.35	.45*	.56**
Liked Field	.28	.30	.39*	.59**
B. Humanities, Fine Arts				
Progress Rating	.38*	.44**	.01	.03
Liked Instructor	.42**	.44**	-.03	-.14
Liked Field	.51**	.54***	.09	.03
C. Applied Sciences: Agriculture, Engineering, Veterinary Medicine				
Progress Rating	.07	-.06	-.10	-.11
Liked Instructor	.07	-.08	-.09	-.13
Liked Field	.16	.05	.03	.07
D. Applied Social Sciences: Education, Business, Spch.Path. & Aud., F.C.D., Reg. & Com. Planning				
Progress Rating	.21*	.10	.13	.06
Liked Instructor	.30***	.30***	.25**	.29**
Liked Field	.27**	.24**	.21*	.23**
E. Applied Arts: Architecture & Design, Mass Communication & Journalism, Clothing & Textiles				
Progress Rating	.35*	.20	.35*	.26
Liked Instructor	.31	.33	.31	.37*
Liked Field	.34*	.33	.34	.38*
F. Natural Sciences: Science, Psychology, Plant Pathology & Entomology, Grain Science				
Progress Rating	.10	.00	.08	-.12
Liked Instructor	.07	-.03	.05	-.11
Liked Field	.10	.08	.08	-.02
G. Mathematical Sciences: Mathematics, Statistics, Computer Science, Applied Math				
Progress Rating	-.12	-.28	-.07	-.26
Liked Instructor	.08	-.26	.13	-.23
Liked Field	.14	-.04	.26	.04

Significance Levels for Correlations (one-tailed tests)

* $p < .05$
** $p < .025$
*** $p < .005$

TABLE 4

TEACHING EFFECTIVENESS AND SALARY INCREASES:
COMPARISON OF FACULTY IN RELATED ACADEMIC AREAS

I. Mean Values for Combined Academic Areas

	Number	$ Salary Increase	% Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
Applied Sciences, Natural Sciences, & Mathematics	118	1791.49	10.71	3.64	3.78	3.83	3.59
Social Sciences, & Applied Soc. Sci.	99	1548.10	10.66	3.79	3.96	4.02	3.67
Humanities, Fine Arts, & Applied Arts	49	1472.78	10.74	3.73	3.88	3.88	3.73

II. Correlations (Zero Order and Partial) by Combined Academic Area

	Zero Order Correlations		Partial Correlations (Controlling for Motivation)	
	Percent Increase	Dollar Increase	Percent Increase	Dollar Increase
A. Applied Sciences, Natural Sciences, & Mathematical Sciences				
Progress Rating	.07	-.03	-.03	-.13
Liked Instructor	.08	-.06	.01	-.14
Liked Field	.14	.08	.08	.04
B. Social Sciences, & Applied Social Sciences				
Progress Rating	.19*	.13	.13	.10
Liked Instructor	.29***	.30***	.25**	.30***
Liked Field	.26***	.24**	.21**	.26**
C. Humanities, Fine Arts, & Applied Arts				
Progress Rating	.34**	.21	.22	.11
Liked Instructor	.29**	.21	.17	.12
Liked Field	.37***	.29**	.24	.20

Significance Levels for Correlations (one-tailed tests)

* $p < .05$
** $p < .025$
*** $p < .005$

positive and high for instructors, positive and low for assistant and associate professors, and non-significant for full professors. Partial correlations were generally smaller, but followed the same general trend.

INSERT TABLE 5 HERE

Degree Granting Status of the Department

Departments were grouped into Ph.D. and non-Ph.D. granting departments, and results based on this classification are presented in Table 6. Both zero order correlations and partial correlations were higher for non-Ph.D. granting departments than for Ph.D. granting departments, again confirming theoretical expectations.

INSERT TABLE 6 HERE

Teaching Emphasis of Faculty Members

In Table 7 faculty members were classified on the basis of the amount of time they devoted to teaching activities; data are reported for three broad groupings (Low, Moderate, and High Emphasis). When Ratio A (Direct Teaching Activities) was used to classify faculty members, correlations between salary data and teaching effectiveness ratings were directly related to the amount of emphasis placed on teaching -- the greater the emphasis placed on teaching the higher the zero order and partial correlation. For the group with low Emphasis on Direct Teaching Activities, there was no relationship between salary increases and teaching effectiveness ratings.

INSERT TABLE 7 HERE

When All Teaching Activities were considered (Ratio-B), correlations for the "High Emphasis" group were even stronger; but no relationships were found for either the "moderate" or "low" groups.

DISCUSSION

Although the sample was large (N=266) and included faculty members from all colleges of the University, it was not necessarily representative. Only those who voluntarily participated in the teaching evaluation program sponsored by the Office of Educational Resources were included. There is some reason to believe that such volunteers are, on the average, somewhat more effective teachers than non-volunteers. More importantly, while the purpose of the program is to help faculty members improve their effectiveness, some probably shared results with their department head to facilitate the faculty evaluation process. To the degree that this was true, the relationships reported in this study between salary increases and objective measures of teaching effectiveness probably overestimate the relationship for the entire population.

TABLE 5

TEACHING EFFECTIVENESS AND SALARY INCREASES:
FACULTY MEMBERS CLASSIFIED BY ACADEMIC RANK

I. Mean Values for 4 Faculty Ranks

	Number	$ Salary Increase	% Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
Instructor	16	1117.50	10.64	3.77	3.82	3.90	3.67
Assist. Prof.	105	1445.31	10.63	3.75	3.94	3.91	3.66
Assoc. Prof.	90	1709.63	10.83	3.74	3.87	3.95	3.70
Professor	55	2060.35	10.62	3.58	3.72	3.84	3.55

II. Correlations (Zero Order and Partial) by Faculty Rank

	Zero-Order Correlations		Partial Correlations (Controlling for Motivation)	
	Percent Increase	Dollar Increase	Percent Increase	Dollar Increase
A. Instructors				
Progress Rating	.55**	.44*	.43	.33
Liked Instructor	.59**	.54**	.50*	.46*
Liked Field	.74***	.66***	.67***	.61**
B. Assistant Professors				
Progress Rating	.16*	.18*	.10	.11
Liked Instructor	.22**	.21**	.17*	.16
Liked Field	.22**	.20**	.17*	.14
C. Associate Professors				
Progress Rating	.18*	.14	.04	-.03
Liked Instructor	.33***	.25**	.25**	.14
Liked Field	.28***	.26**	.18*	.13
D. Professors				
Progress Rating	.03	.00	.04	.13
Liked Instructor	-.12	-.03	-.17	.06
Liked Field	.01	.00	.01	.17

Significance Levels for Correlations (one-tailed tests)

* $p < .05$
** $p < .025$
*** $p < .005$

TABLE 6

TEACHING EFFECTIVENESS AND SALARY INCREASES:
FACULTY MEMBERS IN "Ph.D. Granting Departments" vs. THOSE IN "Non-Ph.D. Granting Departments"

I. Mean Values for Faculty by Department Type

	Number	$ Salary Increase	% Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
Ph.D.	162	1684.65	10.49	3.70	3.87	3.90	3.59
Non-Ph.D.	104	1576.06	11.02	3.73	3.86	3.92	3.74

II. Correlations (Zero Order and Partial) by Degree Offered

	Zero Order Correlations		Partial Correlations (Controlling for Motivation)	
	Percent Increase	Dollar Increase	Percent Increase	Dollar Increase
A. Ph.D. Departments				
Progress Rating	.10	-.01	.03	-.14
Liked Instructor	.16**	.02	.11	-.07
Liked Field	.18**	.11	.14*	.02
B. Non-Ph.D. Departments				
Progress Rating	.26***	.10	.17*	.13
Liked Instructor	.27***	.21**	.19*	.25**
Liked Field	.30***	.18*	.22**	.27***

Significance Levels for Correlations (one-tailed tests)

* $p < .05$
** $p < .025$
*** $p < .005$

TABLE 7

TEACHING EFFECTIVENESS AND SALARY INCREASES:
COMPARISON OF FACULTY ON THE BASIS OF RELATIVE EMPHASIS ON TEACHING ACTIVITIES

I. RATIO-A (Direct Teaching Activities)

A. Mean Values for 3 Ratio-A Groups of Faculty

	Number	$ Salary Increase	% Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
Low Emphasis	54	1864.15	11.17	3.62	3.81	3.84	3.57
Medium Emphasis	161	1656.42	10.73	3.75	3.91	3.95	3.65
High Emphasis	47	1356.60	10.10	3.70	3.81	3.89	3.78

B. Correlations (Zero Order and Partial) by Ratio-A Teaching Emphasis Groups

	Zero Order Correlations		Partial Correlations (Controlling for Motivation)	
	Percent Increase	Dollar Increase	Percent Increase	Dollar Increase
1. Low Emphasis				
Progress Rating	.04	-.06	-.08	-.14
Liked Instructor	.09	.00	.00	-.04
Liked Field	.12	.06	.03	.03
2. Medium Emphasis				
Progress Rating	.20**	.08	.12	.03
Liked Instructor	.19**	.06	.12	.02
Liked Field	.22***	.15*	.15*	.12
3. High Emphasis				
Progress Rating	.26*	.09	.14	-.03
Liked Instructor	.39***	.27*	.29*	.18
Liked Field	.41***	.27*	.31**	.17

II. RATIO-B (All Teaching Activities)

A. Mean Values for 3 Ratio-B Groups of Faculty

	Number	$ Salary Increase	% Salary Increase	Progress Rating	Liked Instructor	Liked Field	Motivation Self Rating
Low Emphasis	45	1787.67	10.21	3.55	3.70	3.74	3.49
Medium Emphasis	146	1713.38	11.08	3.73	3.91	3.95	3.64
High Emphasis	71	1415.65	10.27	3.78	3.89	3.96	3.80

B. Correlations (Zero Order and Partial) by Ratio-B Teaching Emphasis Group

	Zero Order Correlations		Partial Correlations (Controlling for Motivation)	
	Percent Increase	Dollar Increase	Percent Increase	Dollar Increase
1. Low Emphasis				
Progress Rating	.07	.07	-.06	-.15
Liked Instructor	.22	.15	.17	.02
Liked Field	.20	.23	.16	.10
2. Medium Emphasis				
Progress Rating	.12	.02	.06	.00
Liked Instructor	.05	-.06	-.02	-.09
Liked Field	.11	.03	.03	.01
3. High Emphasis				
Progress Rating	.31***	.19	.17	.06
Liked Instructor	.48***	.38***	.39***	.30***
Liked Field	.49***	.39***	.39***	.30***

Significance Levels for Correlations (one-tailed tests)

* $p < .05$
** $p < .025$
*** $p < .005$

Although results varied among subgroups, there was generally a positive and significant relationship between student ratings of teaching effectiveness and percent salary increase. For the total sample, this relationship was very modest (r about .20), and in most "science" areas it was non-existent (whether these were "applied" areas like Engineering, Veterinary Medicine, or Agriculture, or more "basic" fields in the physical, biological, and mathematical areas). In other fields of study, the correlations tended to be in the .30 to .40 range.

Should they be higher? Possibly. On the average, if teaching constitutes about 60 percent of the typical faculty member's responsibility, then 60 percent of the merit evaluation should be based on teaching effectiveness. While student ratings are only one of the ways such effectiveness can be assessed, it seems reasonable to allot them about 50 percent of the weight (leaving 50 percent for other types of input or judgment). Thus, in toto, student ratings might be expected to account for about 30 percent of the total merit evaluation of the typical faculty member (.60 X .50). If this were the case, student ratings would correlate about .55 ($\sqrt{.30}$) with percent increase. On the basis of this reasoning, it appears that the relationships found in this study were "too low"; i.e., that student input was "undervalued".

On the other hand, one could hardly expect maximum correlations given the conditions of the study. (1) Student ratings for only one semester were used, even though merit increases were based on a full year's performance. (2) Only those courses selected for evaluation by the faculty member were included. (3) There was no guarantee that the student ratings were seen by those responsible for faculty evaluation. Given these limitations, the magnitude of the relationships found appear more reasonable.

It is especially reassuring to note that relationships were more pronounced for faculty members who were most involved in teaching (those of lower ranks; those teaching in non-Ph.D. degree programs; those spending the greatest proportion of time in teaching). Apparently, department heads at KSU have differentiated appropriately among faculty members whose professional responsibilities differ widely.

With a few exceptions, when student motivation was statistically controlled, the relationship between student ratings and salary increases diminished. Thus, there was some evidence that those responsible for faculty evaluation may not have been sensitive to the complexities of teaching evaluation. It is relatively easy to obtain favorable ratings from interested and motivated students; but apathetic or negative students are hard to impress. Department heads should take this into account in interpreting student ratings.

Future studies should be modified by including student ratings for a full year (rather than one semester), determining what percent of courses were rated, and distinguishing between those whose student ratings were used in the merit evaluation process and those who did not share results.

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